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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,549	01/09/2002	Christopher A. Michaluk	00029CIP	5470

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EXAMINER

ZHENG, LOIS L

ART UNIT PAPER NUMBER

1742

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,549

Applicant(s)

MICHALUK, CHRISTOPHER A.

Examiner

Lois Zheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-35 and 37-95 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-35 and 37-95 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9 June 2006 has been entered.

Status of Claims

2. New claim 95 is added in view of the amendment filed 9 June 2006. Therefore, Claims 2-35 and 37-95 are currently under examination.

Claim Objections

3. Claim 95 is objected to since it is unclear what the claimed range of not exceeding 20 is directed to. Based on the specification, page 6 lines 6-7, the claimed range of not exceeding 20 is directed to the aspect ratio of the longitudinal grains.

Appropriate changes to claim 95 are required.

The examiner is interpreting claim 95 to mean that the aspect ratio of the longitudinal grains of the extruded billet do not exceed 20.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-14, 16-17, 89-90 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. "Influence of Transverse Rolling on the Microstructural and Textural Development of Pure Tantalum", Metallurgical Transactions A, Volume 23A, August 1992, pages 2183-2191(Clark) in view of International Application Publication WO 87/07650(WO '650).

The rejection grounds for instant claims 2-4, 16-17 and 89-90 are maintained for the same reason as stated in the Final Office Action mailed 17 November 2003.

In addition, the language "extruded" and "after extrusion and before any further thermomechanical processing" are directed to how the tantalum billet is made(i.e. process limitations), therefore, do not lend patentability to the instant product claims 2-14 and 16-17. It is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, the burden falls upon the applicant to show that any process steps associated therewith results in a product materially different from that disclosed in the prior art. See *In re Thorpe*, (227 USPQ 964), *In re Brown*, (173 USPQ 685), *In re Fessman*, (180 USPQ 524) and MPEP 2113. In this case, since Clark in view of WO'650 teaches a substantially the same tantalum product, applicant has the burden to show that the claimed process limitations would produces a materially different tantalum product then that of Clark in view of WO'650.

Furthermore, the language "after extrusion and before any further thermomechanical processing" in claim 2 does not lend patentability to process claims

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89-90 since claims 89-90 depend from claim 2 whose patentability is not affected by process limitations such as thermomechanical processing steps. Lastly, the process claims 89-90 only positively recites extrusion and subsequent annealing steps.

Regarding new claim 95, Fig. 8 of Clark shows uniform grains with similar grain width and length. Therefore, the examiner concludes that the tantalum material of Clark in view of WO'650 has an aspect ratio of the longitudinal grains not exceeding 20 as claimed.

6. Claims 18-35, 71-79 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of WO '650, further in view of Friedman et al. US 5,482,672(Friedman).

The rejection grounds of instant claims 18-35, 71-79 and 91 are maintained for the same reason as set forth in paragraphs 4 & 5 of the Final Office Action mailed 17 November 2003.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of WO '650, further in view of Rerat US 4,149,876(Rerat).

The rejection ground for instant claim 15 is maintained for the same reason as stated in paragraph 6 of the Final Office Action mailed 17 November 2003.

8. Claims 37-49, 51-70, 80-88 and 92-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of Friedman, further in view of Japanese Patent 362104180A(JP '180).

The rejection grounds for instant claims 37-49, 51-70, 80-88 and 92-94 are maintained for the same reason as stated in paragraph 8 of the Non-Final Office Action mailed 25 January 2005.

The process limitations such as extrusion and further thermalmechanical processing steps does not lend patentability to the instant produce claim 37 for the same reasons as set forth in paragraph 5 above.

9. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of Friedman, further in view of JP'180, and further in view of Rerat.

The rejection ground of instant claim 50 is maintained for the same reason as stated in the rejection of claim 15 above.

Response to Arguments

10. Applicant's arguments filed 9 June 2006 have been fully considered but they are not persuasive.

The examiner acknowledges and thank applicant for pointing out the support for the definition of "substantially uniform average grain size". The examiner would also like to point out that Fig. 8 of Clark shows substantially uniform grain size in the tantalum product.

Regarding applicant's argument with respect to process limitations and the instant product and process claims, the examiner maintains the position that the process limitations such as extrusion and further thermomechanical processing steps as recited in claims 2 and 37 do not lend patentability to the instant product claims 2-13 and 37-48. The process claims 18-35 and 53-94 does not positively recites

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substantially uniform grain size only after extrusion and prior to further thermal mechanical processing. The processing claims only positively recites extrusion and subsequent annealing steps. Therefore, applicant's argument is not persuasive.

Applicant further argues that Clark and WO'650 are not combinable since the examiner does not taken into account that it is more difficult to achieve a lower grain size when working with a higher purity tantalum and their impact on other metal properties.

The examiner does not find applicant's argument persuasive since the actual grain size ranges are not recited in the independent claims 2 and 37. The instant claims 2 and 37 only requires a substantially uniform grain size, which is taught by Clark in view of WO'650. Furthermore, since Clark teaches high purity tantalum and process of working with high purity tantalum, one of ordinary skill in the art would have found it obvious that the process of Clark can be applied to the high purity tantalum of WO'650 and achieving the claimed tantalum product with expected success.

Applicant further argues that Friedman cannot be combined with Clark since Friedman uses a powder metallurgically produced tantalum material and Clark uses a ingot-derived tantalum material.

The examiner does not find applicant's argument persuasive since extrusion is a well-known metal working method that can be applied to billets either formed by powder metallurgy or metal ingots in order to shape the metal into final products. Since both Clark and Friedman deals with extrusion of tantalum material, one of ordinary skill in the

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art would have find it obvious to have applied the extrusion step of Friedman into Clark with expected success.

Regarding applicant's argument that Rerat teaches production of capacitor from powdered tantalum, and the combination of Rerat with Clark and WO'650 does not teach the claimed invention, the examiner does not find applicant's argument persuasive. Based on the response to applicant's argument above, the examiner maintains the position that Clark in view of WO'650 teach an extruded tantalum billet of the instant invention. In addition, Rerat teaches tantalum and niobium are desirable materials for forming capacitor components. Therefore, one of ordinary skill in the art would have found it obvious in using the extrude tantalum of Clark in view of WO'650 in making capacitor components with expected success in order to provide desirable properties to the capacitor components.

Applicant further argues that one skilled in the art would not substitute niobium for tantalum since they have different properties. The examiner does not find applicant's argument persuasive since tantalum and niobium belong to the same group of metals in the periodic table and exhibit very similar properties. In addition, Friedman teaches that both tantalum and niobium can be extruded. Therefore, one ordinary skill in the art would have found it obvious to have extruded a niobium by the processing steps of Clark in view of WO'650 and JP'180 with expected success in view of the teachings of Friedman.

The examiner's response to the remaining arguments can be found in previous Final Office Action mailed 14 July 2005.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Hakko US US 4,141,719 teaches that high purity tantalum ingot can be used to make capacitors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LLZ

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